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ABSTRACT

The present study re-analyzed data from a previous study in order to explore the issue of re-invention of innovations in the process of implementation by organizations following recommendations from consultants. It was hypothesized that ideas with certain characteristics would be more likely to be re-invented than adopted without change. The following variables were considered: complexity (number of people, cost, time), specificity, subject of the idea, and flexibility. Measures of utilization were made approximately two months following the consultation (T1) and again two months later (T2); chi square analyses were performed for both T1 and T2. Although not all analyses reached the .05 level of significance, the overall results suggest that those ideas which are re-invented are those which require greater rather than lesser effort. Re-invention occurs nearly as often as adoption with no change. Re-Invention is more likely to occur in cases where innovations are more complex, when innovations are irreversible, in situations where a consultant does not take active control or play a major role, and in group sessions which are relatively unstructured. (VT)

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RE-INVENTION IN ADOPTION

A Study of Community Mental Health Centers

Judith K. Larsen
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Our work on planned change and the role of re-invention has been influenced by the thinking and suggestions of a number of persons. Dr. Howard Davis of NIMH has long been an advocate of planned change and both he and Susan Salasin have had a major impact on our total research effort. Special help in the area of conceptualization has come from Professor Gerald Zaltman of the University of Pittsburgh, Dr. Alice E. Ahlgren of Cromemco, Inc. and most of all from Professor Everett M. Rogers of Stanford University. Extensive assistance in planning and conducting the data analysis was provided by Naomi L. Bloom and David Gross. Finally, we appreciate the support and organization of our secretaries, Virginia David and Alice Frimmersdorf, for their patience with successive stages of this report.

I. INTRODUCTION

For centuries people have come across new ideas, become intrigued and tried them, left their mark on them, and passed the ideas on to others. This process has occurred in the fine arts with master craftsmen and artists developing new schools of expression, in business where there has been evolution from guilds to multi-national corporations, in science with the continual refinement and definition of theories--in fact, this is the process of developing knowledge and culture.

The study of the process of transferring knowledge--regardless of the specific topic area involved--has only recently attracted organized study; only in this century has a body of expertise on the diffusion process been developed. With this work, it has become increasingly apparent that knowledge diffusion is a concept of many meanings and interpretations. Ideas can move from one person to another with no change, a process we call adoption. A piece of information can also be transferred from one person to another with some facets remaining unchanged and others modified slightly. This concept, the degree to which an idea is changed by the adopter in the process of implementation, may be termed re-invention and is the focus of the present study.

Our interest in re-invention was accentuated by results of a previous study of consultation to community mental health centers, (Larsen, Norris and Kroll, 1976). The fact that a large proportion of ideas were not adopted as suggested, but were adapted, or re-invented, was a finding too significant to ignore. Yet when we turned to the literature for studies dealing with this process, there was little to be found. We therefore decided to reanalyze data collected for the consultation study to focus on the re-invention issue. Since no new data collection was conducted, we were limited to some extent by the nature of the data already available. Nevertheless, we were able to take certain preliminary steps in addressing the issue of re-invention.

Purpose of the Study

The purpose of the present study is to re-analyze data from a previous study conducted by the American Institutes for Research, in collaboration with the National Institute of Mental Health, to explore the issue of re-invention

of innovations in the process of their implementation by organizations following recommendations provided by consultants.

The AIR-NIMH study was based on a user-oriented model for planned change in which an experienced change agent or consultant worked with a consultee-agency to clarify areas defined by the agency as problems and to identify possible solutions. The study focused on consultation in community mental health centers (CMHCs) throughout the United States. The study of re-invention in this setting is especially intriguing since the process of innovation is triggered by need delineation by the potential adopters (CMHC staff); the consultants are then chosen to meet the needs of the CMHC based on their expertise in the subject matter specifically identified by the potential adopter. The present strategy is a departure from the past attempts to facilitate planned change in that neither innovations nor change agents are "dumped" on the potential adopters. In this case, needs of the agency are the basis for consultation, and expertise and subject matter familiarity are the criteria for the selection of the change agent. Thus, an optimal mix of needs and solutions is created and each consultation is tailor made. In view of these circumstances we felt that a study of the re-invention of innovations in the process of implementation would be especially important.

II. BACKGROUND

Due to the lack of a body of literature dealing directly with the present conceptual paradigm, we began by defining the main concepts and variables in the study.

Re-invention is the degree to which an innovation is changed by the adopters in the process of implementation.

Innovation is an idea, practice, or object perceived as new by the relevant unit of adoption.

Utilization is the degree to which an innovation is implemented by the receiver after its original introduction by the source. The varying degrees of use of an innovation suggests that re-invention of ideas is a common occurrence in the process of implementation.

Re-invention of an innovation could be measured in terms of degree of use, amount of use, time of use, length of use, and in other quantifiable terms. Some of the more obviously relevant dimensions on which to examine re-invention are the following:

Fidelity is the degree to which elements of an innovation are implemented by the receiver in the form introduced by the source.

Modification is the degree to which the adopters of an innovation change the original innovation other than by adding new elements into a somewhat different form.

Expansion is the degree to which the adopters of an innovation add supplemental elements or revivify the original innovation.

Extent is the degree to which innovations are implemented by the receiver.

Flexibility is the degree to which the innovation can be readily continued or discontinued once it is introduced.

Complexity is the degree to which implementation of an innovation requires a variety of resources.

Specificity is the degree to which components of an innovation are outlined in detail.

Why has re-invention not been fully recognized in past research and writings about diffusion, nor in programs of change? Re-invention has been largely ignored by change agents, inventors and user agencies, with some agencies actually discouraging re-invention by their clients. The general reluctance to deal with the issue of re-invention may arise from the method of counting the rate of adoption among a given audience. Thus, if an innovation is called "Innovation 3", it must be "Innovation 3" on the part of every adopter. Observers instead should recognize that often re-invention occurs naturally, and that it should be encouraged as long as it leads to advantageous effects.

For the inventor of an innovation, psychological involvement with the innovation is often so great that re-invention is unwelcomed. Inventors may have a "prima donna" complex in insisting that their innovation cannot be re-invented in any way that will be more effective.

Another reason for lack of attention to re-invention may be the low esteem given re-inventors, as opposed to inventors. Thus, some of the early work in educational innovations indicates that credit for success goes to the inventor, but blame for failure is lodged with the teacher-adopter. Thus, in order to avoid such a situation, the adopters re-invent an innovation and call it by a name of their choice. "...The reward for invention within the system was very considerable but there was no reward for adopting an invention from within the system. Other systems adopted some of the innovations developed in this system, but the system itself did not. As one of the leaders in the system told me, the 'Brownie points went to the innovators, not their imitators'" (Foshay, 1973).

Historically, diffusion research began with rural sociologists investigating the diffusion of agricultural innovations like hybrid corn seed (Ryan and Gross, 1943). This idea was almost universally advantageous to the Iowa farmers who adopted it. And hybrid corn could not be re-invented; it is a biological impossibility. Each year, a farmer must purchase a new supply of the seed. So modification of the genetic makeup by the farmers is not feasible (although it might be possible to plant the hybrid seed in a particular way

or to modify the innovation in some other relatively minor way). Naturally, corn breeders can modify a particular strain of corn to fit the needs of specific localities by creating various hybrid seeds (Griliches, 1960). The hybrid corn study by Ryan and Gross (1943) had a tremendous effect on the some 3,000 subsequent studies of the diffusion of innovations. Many of these innovations, unlike hybrid corn, could be (and probably were) re-invented, but diffusion scholars did not learn of this because of following too closely the method and theory of the earlier study in the diffusion field.

The classical diffusion model assumed that all (or at least most) innovations were inherently "good" or "profitable" or that they had "relative advantage" over the existing practice they were replacing. Such oversimplification has led to a "pro-innovation bias" (Rogers and Agarwala-Rogers, 1976).

Past study of diffusion has generally stopped with the individual's decision to adopt an innovation; it has not really looked into the innovation's implementation, the process which begins with the decision to adopt an innovation, and continues through the steps involved in using the innovation, until it is institutionalized to the point at which the idea loses its newness and becomes an unrecognizable element in the adopting unit's ongoing operations (Agarwala-Rogers and Rogers, 1976). Thus, the re-invention issue was simply not faced by most diffusion researchers, who chose to simplify the reality they studied by treating the innovation as a constant. Had they pursued the innovation process further, into actual implementation by the adopters, researchers undoubtedly would have discovered that "pure" adoption--in which adopters implement the innovation in the exact form as it was devised--often does not occur and would in fact be inappropriate.

In some settings, the innovations may not work in their original form, but might work very well if changed somewhat to meet the circumstances of the user. In these situations a considerable degree of re-invention may take place in the process of implementation. The adopters adapt an innovation to fit their own needs, or sometimes there is mutual adaptation between the adopter and inventor or the sponsoring agency.

Individuals come to the innovation adoption process with different needs and problems. These needs and problems determine the degree to which an innovation is re-invented. The degree or amount of re-invention, in turn, shapes

the consequences of an innovation.

Re-invention occurs for a number of reasons: (1) the innovation is not appropriate for "pure adoption" in a particular setting; (2) an adopter may lack information about an innovation at the stage of initiation and implementation of an innovation; (3) innovations may be specified in conceptual rather than operational terms, resulting in a variety of uses among adopters; (4) steps that constitute an innovation are not explicit enough.

The above reasons (and others) lead toward the re-invention of innovations at the initiation stage. The adopters decide to adopt an innovation based on their understanding of the innovation and circumstances. Such adoptions may not fulfill the criterion envisioned by the inventor of the innovation or the promoting change agency.

Studies in re-invention. Charters and Pelligrin in the early 1970s studied the innovation of differentiated staffing in public schools. They found "the word could (and did) mean widely differing things to the staff, and nothing to some. Thus, the innovation, if it can be called that, was little more than an evocative."

Three possible levels of implementation were noted in another study: (1) mutual adaptation--both institutional setting and project design were modified, (2) co-option--the project was changed to meet the needs of the organization but there was no change in the institutional factors, and (3) non-implementation--neither the project nor the institution went through any changes to accommodate the innovation. Results of the project were that mutual adaptation of the innovative program and its setting were central to successful implementation (Levinson, 1976).

In a recently completed study of diffusion and adoption of teaching innovations among university professors, researchers found that diversity occurred in the application of the four IMPACT innovations (Rogers, Agarwala-Rogers and Lee, 1975; Agarwala-Rogers, Rogers and Wills, 1977). Two computer-based innovations were imported into various institutions, sometimes as a general concept and at times as computer programs. These innovations occasionally went through a process much like re-invention as the innovation was applied to meet the institution's characteristics, such as size of class,

nature of the student body, make and model of the computer used, subject matter, etc. It was observed that the nature of the innovation, as well as the policy of the inventor, are factors determining the degree to which re-invention may occur. The study also found some weak indications that general innovations are more likely to be re-invented than innovations which are more specific in nature. The investigators concluded that an innovation is not always implemented in the manner envisioned by the inventor, and perhaps some innovations are best re-invented (or adapted) rather than adopted.

In a recent study conducted by the Stanford Research Institute (Emrick, Peterson, Agarwala-Rogers, 1977) evaluating the impact of the National Diffusion Network program in primary and secondary education in the United States, the researchers attempted to examine the issue of re-invention. A typology of re-invention was developed, based on the efforts required to use an innovation. The three relevant categories are: (1) fidelity of use, (2) scope of use, and (3) level of use.

Factors Involved in the Current Study

The American Institutes for Research began investigating diffusion and utilization of information among agencies and persons delivering mental health services several years ago with a study of how information is diffused among mental health personnel in state hospitals (Roberts & Larsen, 1971). That study indicated that personal methods of communication were preferred in first learning new ideas, while print methods were often used to obtain more information to carry out an innovation. In a subsequent study, Larsen, Arutunian, and Finley (1974) compared the actual effectiveness of print and interpersonal methods for diffusing information, and found that a combination of print and interpersonal methods was more effective in leading mental health staffs to consider innovations than were print methods alone. Based on this earlier work, a study of consultation was designed to investigate the characteristics and behaviors of consultants, of consultee agencies, and of the interaction among consultant and consultee which contribute to actual use of information provided by the consultant. In the process of gathering data during these consultations, considerable data related to re-invention were collected as well, and form the basis of the present report.

The focus of this report is on the investigation of characteristics of the innovations in situations where re-invention did occur, compared to those cases where re-invention did not occur. The present study investigated the role played by consultants in helping community mental health centers (CMHCs) with specific need areas delineated by the staff of CMHCs. Re-invention was observed in the process of studying the degree to which the suggestions made by the consultants were utilized by the staff of CMHCs at intervals of two months and four months after the actual consultation. There are nine various categories of utilization which were re-structured into four categories for the re-invention analysis. The four categories are: (1) idea was implemented, re-invention definitely occurred; (2) idea was fully adopted, no re-invention occurred; (3) idea was implemented but insufficient data to determine whether re-invention did or did not occur; and (4) idea was not implemented at all.

Models of planned change. There are three popular and currently used models of planned change: the RD&D (research development and diffusion) model; the local development model; and the user-oriented model. The work reported herein was based on the user-oriented model.

The three models vary in several ways, as shown in Figure 1. The RD&D model had been operative at the federal level predominantly for the last three decades and still continues to be quite popular. However, the shift in thinking at the federal level is crystallized by some of the recently sponsored programs by the National Institute of Mental Health and the U.S. Office of Education.

The figure indicates that the RD&D model assumes that the source of innovations are research and development laboratories as opposed to the local development model and the user-oriented model where the emphasis is placed on the innovation originating from the individuals who are similar to the potential users. Also the RD&D model assumes that an individual is alone in deciding whether to adopt or reject an innovation--a questionable assumption when innovations are adopted by organizations and promoted by change programs on a large scale. A farmer or doctor can relatively easily adopt or reject an innovation, the use of a new drug is rather clear-cut and easily understood by a physician, but to adopt team staffing in a satellite center or to start a child services program is very complex, and often not very clearly understood by staff involved.

Figure 1

A Comparison of the Three Widely Used Models of Planned Change

Main Tenets	RD&D Model	Local Development Model	User-Oriented Model
Sources of Innovation	Most of the innovations are developed by R&D laboratories.	Most of the innovations are developed by local users or practitioners.	Most of the innovations come from research based knowledge and experience of the change agent or consultant.
Adoption Decision	Assumes individuals make decisions to adopt or reject innovations.	Systems or organizations collectively decide to adopt or reject innovations.	Systems or organizations collectively with the change agent decide to adopt or reject innovations.
Adopting Unit	Passive and will adopt innovations if delivered on the right channel.	Active in seeking innovations but have to be persuaded and trained to use the innovation.	Needs exist and are expressed; if suggested, innovations meet the needs and adoption takes place.
Communication Flows	Most of the information is top-down and one-sided.	Most of the information is bottom-up and interactive.	Most of the information is interactive and collegial in nature.
Communication Channels	Wide use of mass media channels both at awareness and adoption stages.	Use of mass media channels at the awareness stage but augmented by interpersonal channels at the adoption stage.	Mostly interpersonal channels are used at awareness as well as adoption stages.
Role of Change Agent	Mainly that of information provider and technical assistance.	Both information provider and adoption-technical expert.	Both process and content information provider and specialist. Trained as a professional as well as a change agent.
Implementation	Little or no attention to steps involved in use.	Implementation training is provided and some follow-up is conducted.	Implementation is worked out with the adopting units to suit the local conditions.

Figure 1 (continued)

Main Tenets	RD&D Model	Local Development Model	User-Oriented Model
Re-invention	Assumption that innovations are fixed and invariant.	Assumption that local adaptations will and are taking place, and should.	Assumption that help be provided in adapting an innovation to suit the organizational needs, so re-invention is encouraged.
Evaluation	Innovations are not widely tested and evaluated prior to the diffusion, only tested theoretically in laboratories.	Innovations have gone through through actual use prior to validation, then sanctioned for diffusion in a social system.	Innovations are tested on a limited basis prior to their diffusion.
Some Exemplary Studies	Ryan and Gross (1943) Study of Hybrid Corn in Iowa. Richard Carlson (1965) Study of the Diffusion of Modern Math.	National Diffusion Network Project (1974-1977). People's Republic or China's Point Conferences. IMPACT program of the Exxon Education Foundation (1977).	Glaser and Backer (1974) Study of Research Utilization. Sieber (1973) Study of Pilot State Dissemination Project. Larsen (1976) Study of Consultation and its Outcome in Mental Health.

Equally false is the assumption that adopters are passive and that all they need is some "magical" innovation that will satisfy their needs overnight, if only they readily adopt it. In both the local development model and the user-oriented model, the audience delineates its needs and decides on the solutions (innovations). With the user-oriented model more than the local development model, the role of the external consultant or change agent is very crucial.

In the R&D approach, the communication system is assumed to be one-way information distribution, but in the other models it has been revised to include exchange and interaction of ideas between the change agent and developer and the potential adopters. The augmentation of mass media channels by including interpersonal channels has increased the "human touch" as well as put adopters on a more equal basis with the inventors and change agents.

The user-oriented model for planned change, as the term implies, is based on fulfilling the needs of the user agency via intervention by an external change agent (consultant) who is an expert in a content area defined by the agency and also trained in the art of change agentry--namely, consultantship. A more detailed example of a model for planned change directly appropriate to this situation is Decision Determinant Analysis developed by Davis (1975) and using the A VICTORY acronym. While based on learning theory, this model can be expressed in terms that are relevant to the practitioner and that provide a clear indication of specific steps leading to utilization of consultation and to resulting program change. The Decision Determinants Analysis model poses a four stage process of change: (1) problem assessment, (2) goal definition, (3) action, and (4) follow-through. These four steps incorporate the variables represented by the A VICTORY acronym, offered to help recall the eight variables considered necessary and sufficient to account for planned change. The variables are the following:

A	Ability	Capacities to carry out the selection: staff, funds, space, sanctions
V	Values	Pre-decisions, beliefs, manners of operating, and characteristics of the program organization
I	Idea	Information relevant to taking steps to solve the problem

C	Circumstances	Prevailing factors pressing for or detracting from criteria actions
T	Timing	Synchrony with other significant events
O	Obligation	Felt need to do something about a problem
R	Resistances	Both frontstage and backstage concerns for loss if specific action is taken
Y	Yield	Felt rewards, benefits to program participants and consumers

III. METHOD

The data described in this report originally were collected as part of a project investigating information dissemination in community mental health centers. The study investigated variables in the consultation process which contributed to utilization of information provided by the consultant. The design called for intervention--the consultation itself--and for the study of how information utilization is related to the following factors: (1) consultant characteristics, (2) agency characteristics, and (3) consultant-agency interactions. The study also sought to identify systematic patterns of differences between high- and low-utilization consultations.

During the spring of 1975, program-oriented consultations were conducted in 20 CMHCs which were planning to implement a new program or to revise an existing one, and which agreed to participate in the study. Ten consultants, each of whom visited from one to three centers, spent two days at each agency. Consultants and centers were matched on the basis of the problem specified before the visit by the center, and the consultant's expertise. Consultants followed their own style of consultation, except they were required to meet once with the director and once with staff members to confirm the problems, and to provide feedback to the staff before leaving the center. Each consultant was accompanied by an observer who listed the suggestions made by the consultant during the visit. How many and which of these suggestions were adopted, re-invented, or in some way used was investigated in follow-up telephone interviews with staff members two and four months later.

The information gained in these interviews allowed the observer to indicate to what degree each of the ideas was being used. Each idea thus was placed in one of the nine categories shown below:

a. Implemented. The idea had not been used in the past (though it may have been considered or planned). The idea was put into effect, virtually or wholly in the form suggested by the consultant.

b. Idea is being used, but this occurred regardless of the consultant's visit. The idea had been implemented or planned prior to the visit. The consultation had no impact on it.

c. Partly implemented or adapted. Certain features of the consultant's idea, or a variation of it, have been implemented.

d. Steps taken toward implementation. Although the idea has not been implemented yet, the decision to do so has been made, and steps toward it have been taken. These steps might include seeking more information, forming a committee, ordering material, etc.

e. Use of idea revived by visit. The idea had been done in the past, but the consultation revived its practice or increased its use.

f. Under consideration. The suggestion is alive, although it has not gotten beyond discussion. Choice of this category implies that something may well come out of the idea.

g. Considered and rejected. Some discussion took place, but the idea is no longer alive. The rejection was either tacit or explicit.

h. Nothing done. No action, not even discussion, was taken on an idea. (This category is also used for ideas which were obviated by later events.)

i. Implementation not possible for reasons beyond the center's control. The idea was impractical because it required money that wasn't available, or for some similar reason.

The 20 consultations produced wide variation in the number and types of ideas suggested. A total of 333 ideas were given, with a range from 7 to 25 per agency. These ideas varied greatly on such characteristics as type of problem to which they responded and degree of difficulty to implement them. In order to get a better picture of the characteristics of the ideas which might distinguish between those less likely to be implemented as presented and those likely to be re-invented, a literature review was conducted to identify characteristics which have been found to be associated with innovation and change in previous research. The initial list included such characteristics as cost, urgency, trialiability, and compatibility. The list was revised both on the basis of applicability to this particular study, and the degree to which the characteristic could be reliably scored by observers in

the present study. The final set of characteristics is as follows: subject of idea, people required, cost, effort, concreteness, reversibility.

Two AIR observers then classified each idea independently. In cases in which they disagreed, they discussed their differences, established guidelines to deal with them, and came to an agreement on how the idea should be classified.

Judgments on all the characteristics were based on observer perceptions. Of the six characteristics, judges felt most confident in classifying the subject of the idea. The categories for this characteristic were derived from the ideas themselves, providing clear definitions of each.

In classifying ideas on the dimensions of cost, people involved, and degree of effort to implement the idea, concreteness and reversibility, observers used their own estimates, rather than obtaining data from staff, or using staff's perceptions. The decision to proceed in this way was based on practicality; to get objective data on these characteristics would have been time consuming if, indeed, it was possible at all.

Information about consultant characteristics was obtained in questionnaires completed by center staff, by the project observer, and by the consultant him or herself. These responses, plus judgments made by the observer, formed the basis for data reported on consultant characteristics. Finally, one group meeting between staff and consultant was tape recorded and analyzed in terms of time spent in various activities.

Data on degree of utilization of the ideas identified during the consultations had been entered and stored on tape during a previous phase of activity. These data were retrieved, and each idea was re-categorized for the re-invention analysis as follows:

A. The idea was implemented; re-invention definitely occurred. Certain features of an idea or a variation of an idea had been implemented.

B. The idea was fully adopted; no re-invention occurred. The idea was implemented virtually or wholly in the form suggested by the consultant.

C. The idea was implemented or in the process of being implemented, but no data were available on re-invention or adoption. Although

the idea had not been implemented completely, the decision to do so has been made, and steps have been taken toward implementation.

D. The idea was not implemented at all. Either the idea was considered and rejected or no action, not even discussion, was taken on an idea.

The results of the new categorization of consultant ideas are shown in Table 1.

Table 1

Number and Percentage of Suggestions in Categories at First (T_1) and Second (T_2) Follow-Up

		T_1		T_2	
		N	%	N	%
Implemented	Re-invention	30	10%	55	20%
	Adopted as presented	41	14	49	18
Partial implementation; no data on re-invention		103	36	85	30
Not implemented		112	39	91	32
Total		286	99%	280	100%

Of the 280 ideas considered at the second follow-up (T_2), 91 (32 percent) were not implemented by agency staff. The remaining 189 ideas (68 percent) were implemented in varying degrees. Of the 189 ideas, 55 (20 percent) were re-invented, 49 (18 percent) were implemented as suggested by the consultants without any indication of re-invention, and the remaining 85 ideas (30 percent) do not clearly indicate either a definite rate of re-invention or an absence of re-invention.

The percentage of ideas which were re-invented doubled between the first and second follow-up, while the number of ideas adopted as suggested stayed fairly constant. These data do not indicate whether the degree of re-invention increases over time to some optimal point, nor do they tell us whether the number of ideas not implemented continues to decrease.

Variables identifying the characteristics of an idea were analyzed to determine their relationship to re-invention. The following variables were considered:

- Complexity: Number of people required for implementation. This variable was included to provide an indication of the number of people--and

amount of organization--necessary for implementation. The three categories were: (1) one or two staff members needed, (2) three or more staff members, (3) three or more staff plus community members, Board members, staff of other agencies or other non-staff.

- Complexity: Cost. This was a category with two alternatives: (1) does not cost, and (2) cost involves money for facilities, staff, equipment, or materials.

- Complexity: Amount of time required. The variable provides a measure of the degree of effort required to implement an idea. Three categories were used: (1) 8 hours or less of staff or Board time, (2) 8 to 40 hours of staff or Board time, and (3) more than 40 hours of staff or Board time.

- Specificity. The concreteness of the idea is addressed in two categories: (1) specific or (2) abstract.

- Subject of the idea. Ideas suggested during the consultation were assigned to one of seven categories based on the subject of the idea. The categories were information gathering, program development, relations to other human service agencies, relations to the community, relations to the Board, staff time and duties, and administration.

- Flexibility. The extent of future implications of the idea was measured in this variable: (1) the idea can be tried and discarded easily or (2) the idea cannot be discarded easily.

Measures of utilization were made at two points in time, approximately two months following the consultation (T_1) and again four months following consultation (T_2). Two sets of chi square analyses were performed, one using the T_1 measure and the other, the T_2. Results of both analyses are presented.

Each of these characteristics was analyzed in relation to whether the idea was re-invented or adopted as presented, using a chi square analysis. The characteristics also were analyzed in relation to whether the idea was re-invented, adopted as presented, or not adopted at all. Two quite separate activities are included in these tables, i.e. utilization vs. non-utilization,

which may confuse the issue of re-invention. Both re-invention and adopted as presented are variants of utilization, quite different from ideas not adopted at all. Nevertheless, the analysis of ideas which are re-invented, adopted as presented, or not adopted at all is included as Appendix A to this report.

IV. RESULTS

Characteristics of Ideas

As discussed earlier, it was hypothesized that ideas with certain characteristics would be more likely to be re-invented than adopted without change. Tables 2 through 17 show the results of chi square analyses of these relationships. Although not all the analyses reach the usually acceptable .05 level of significance, overall the results suggest that those ideas which are re-invented are those which require greater rather than lesser effort. Ideas which are adopted without change tend to be those which require lesser degrees of effort.

Table 2

Relationship of Complexity: Number of People Required for Implementation by Re-invention

T_1

	1-2 people	3 or more people	Staff plus board, community	Total
Re-invention	4 (13.3%)	16 (53.3%)	10 (33.3%)	30 (100%)
Adopted as presented	19 (46.3)	11 (26.8)	11 (26.8)	41 (100%)
Total	23	27	21	71

$X^2=9.27$, df=2, sig<.01

T_2

Re-invention	11 (20.0%)	25 (45.5)	19 (34.5)	55 (100%)
Adopted as presented	21 (42.9)	16 (32.7)	12 (24.5)	49 (100%)
Total	32	41	31	104

$X^2=6.36$, df=2, sig<.05

We see in Table 2 that more ideas which are re-invented require three or more staff persons; very few re-invented ideas require only one or two persons. Of the adopted ideas, more required only one or two, rather than more, persons.

Table 3

Relationship of Complexity: Cost to Re-invention

T_1

	No Cost	Cost	Total
Re-invention	19 (63.3%)	11 (36.7%)	30 (100%)
Adopted as presented	36 (87.8)	5 (12.2)	41 (100%)
Total	55	16	71

$X^2=4.62$, df=1, sig<.05

T_2

Re-invention	39 (70.9)	16 (29.1)	55 (100%)
Adopted as presented	42 (85.7)	7 (14.3)	49 (100%)
Total	81	23	104

$X^2=2.49$, df=1, n.s.

The relationship of cost to implementation is shown in Table 3. It is clear that of those ideas which were implemented, more fell in the "no cost" than the "cost" category. At T_1 and T_2, however, of those which "cost," more were re-invented than adopted without change.

Table 4

Relationship of Complexity: Amount of Time Required to Re-invention

T_1

	0-40 hrs.	Over 41 hrs.	Total
Re-invention	14 (46.7%)	16 (53.3%)	30 (100%)
Adopted as presented	29 (70.7)	12 (29.3)	41 (100%)
Total	43	28	71

$X^2=3.25$, df=1, sig<.10

T_2

Re-invention	24 (43.6)	31 (56.4)	55 (100%)
Adopted as presented	34 (69.4)	15 (30.6)	49 (100%)
Total	58	46	104

$X^2=5.96$, df=1, sig=.01

In terms of time required to implement, ideas which were re-invented split fairly evenly between less than 40 hours and more than 41 hours, whereas the largest number of ideas which were adopted as presented would require less than 40 hours.

Two other analyses showed no relationship between characteristics of the idea and re-invention.

Table 5

Relationship of Specificity of Idea to Re-invention

T_1

	Specific	Abstract	Total
Re-invention	15 (50.0%)	15 (50.0%)	30 (100%)
Adopted as presented	22 (53.7)	19 (46.3)	41 (100%)
Total	37	34	71

X^2=.00, df=1, n.s.

T_2

Re-invention	26 (47.3%)	29 (52.7%)	55 (100%)
Adopted as presented	27 (55.1)	22 (44.9)	49 (100%)
Total	53	51	104

X^2=.36, df=1, n.s.

As Table 5 shows, the degree of specificity with which the idea was stated showed no relationship to re-invention or adoption.

Table 6

Relationship of Subject of Innovative Idea to Re-invention

T_1

	Information gathering	Program develop.	Relations w/other agencies	Community relations	Board relations	Staff concerns	Admin.	Total
Re-invention	1 (3.3%)	6 (20.0%)	4 (13.3%)	4 (13.3%)	2 (6.7%)	3 (10.0%)	10 (33.3%)	30 (100%)
Adopted as presented	8 (19.5)	5 (12.2)	7 (17.1)	2 (4.9)	5 (12.2)	2 (4.9)	12 (29.3)	41 (100%)
Total	9	11	11	6	7	5	22	71

$X^2=7.16$, df=6, n.s.

T_2

Re-invention	6 (10.9)	14 (25.5)	9 (16.4)	5 (9.1)	2 (3.6)	8 (14.5)	11 (20.0)	55 (100%)
Adopted as presented	10 (20.4)	7 (14.3)	7 (14.3)	4 (8.2)	4 (8.2)	3 (6.1)	14 (28.6)	49 (100%)
Total	16	21	16	9	6	11	25	104

$X^2=6.67$, df=6, n.s.

Table 6 shows that there was no statistically significant relationship between specific subject of the idea and re-invention. The category of ideas ranking first for both re-invented ideas and ideas adopted as presented at T_1 was administration; by T_2, program development ideas ranked first among those re-invented, while administration maintained the top rank among ideas adopted as presented.

As discussed earlier, re-invention increases over time and these data provide an indication of that trend. Ideas which were re-invented nearly doubled between T_1 and T_2 (30 to 55), while those adopted as presented increased at a lower rate (41 to 49). There was little or no increase in topics dealing with Board relations and community relations, whereas there was considerable increase in interest in program development and staff concerns.

Table 7

Relationship of Flexibility to Re-invention

T_1

	Easy to try and discard	Not easy to discard	Total
Re-invention	7 (23.3%)	23 (76.7%)	30 (100%)
Adopted as presented	19 (46.3)	22 (53.7)	41 (100%)
Total	26	45	71

$X^2=3.02$, df=1, sig<.10

T_2

Re-invention	15 (27.3)	40 (72.7)	55 (100%)
Adopted as presented	23 (46.9)	26 (53.1)	49 (100%)
Total	38	66	104

$X^2=3.52$, df=1, sig<.10

Although the relationship between flexibility and re-invention/adoption reached only the .10 level, there is some indication that re-invented ideas were those "not easy to discard", while adopted ideas split evenly between "easy to try and discard" and "not easy to discard".

To summarize, there are statistically significant relationships between certain idea characteristics and re-invention. Ideas which are re-invented are likely to involve three or more staff members, to require 40 or more hours for implementation, and to some extent were not easy to discard once begun.

Characteristics of Consultant

Data on the consultants were collected from observation by trained raters, and from staff of the consultee agencies. The following tables report on consultant characteristics which were statistically significantly related to the re-invention measures.

Table 8

Relationship of Consultant Influence to Re-invention

T_1

	No influence	Minor influence	Major influence	Total
Re-invention	9 (31.0%)	13 (44.8%)	7 (24.1%)	29 (100%)
Adopted as presented	7 (17.1)	8 (19.5)	26 (63.4)	41 (100%)
Total	16	21	33	70

$X^2=10.64$, df=2, sig<.01

T_2

Re-invention	21 (38.2%)	22 (40.0%)	12 (21.8%)	55 (100%)
Adopted as presented	9 (18.4)	7 (14.3)	33 (67.3)	49 (100%)
Total	30	29	45	104

$X^2=22.09$, df=2, sig<.000

The degree of influence exerted by a consultant or change agent is not equal for all ideas. In this study the degree of consultant influence as perceived by the consultee was determined for each idea: consultant had no influence, consultant had minor influence, consultant had major influence. As Table 8 illustrates, at both data collection times there was a strong relationship between re-invention and influence of the consultant. The consultant was perceived as having a major influence primarily when his/her ideas were adopted in their original form; when re-invention occurred, the consultant often was seen as having a minor influence. Perhaps the staff had internalized the suggestion and did not recognize the consultant as the source of the idea, or perhaps the extent of re-invention was so great that the consultant's original suggestion was difficult to identify.

Three specific consultant behaviors--consultant's control of consultation, consultant's determination of motive for consultation, consultant works with entire center--were found to be related to re-invention to varying degrees, and are reported in the following tables.

Table 9

Relationship of Consultant's Control of Consultation to Re-invention

T_1

	Consultant exercised control	Consultant did not exercise control	Total
Re-invention	14 (46.7%)	16 (53.3%)	30 (100%)
Adopted as presented	34 (82.9)	7 (17.1)	41 (100%)
Total	48	23	71

$X^2=8.81$, df=1, sig<.01

T_2

Re-invention	22 (40.0%)	33 (60.0%)	55 (100%)
Adopted as presented	39 (79.6)	10 (20.4)	49 (100%)
Total	61	43	104

$X^2=15.16$, df=1, sig<.0001

Table 10

Relationship of Consultant's Determining Motive for Consultation to Re-invention

T_1

	Consultant determined agency's motive for consultation	Consultant did not determine agency's motive for consultation	Total
Re-invention	19 (63.3%)	11 (36.7%)	30 (100%)
Adopted as presented	34 (82.9)	7 (17.1)	41 (100%)
Total	53	18	71

$X^2=2.56$, df=1, sig=.10

T_2

Re-invention	30 (54.5%)	25 (45.5%)	55 (100%)
Adopted as presented	41 (83.7)	8 (16.3)	49 (100%)
Total	71	33	104

$X^2=8.85$, df=1, sig<.01

Table 11

Relationship of Consultant Working With Whole Agency to Re-invention

T_1

	Consultant worked with whole agency	Consultant did not work with whole agency	Total
Re-invention	23 (76.7%)	7 (23.3%)	30 (100%)
Adopted as presented	36 (87.8)	5 (12.2)	41 (100%)
Total	59	12	71

X^2=.84, df=1, n.s.

T_2

Re-invention	38 (69.1%)	17 (30.9%)	55 (100%)
Adopted as presented	43 (87.8)	6 (12.2)	49 (100%)
Total	81	23	104

X^2=4.21, df=1, sig<.05

With all these behaviors (Tables 9, 10, and 11), ideas which were completely adopted were related to a considerable degree of consultant activity--83 percent of the ideas adopted indicated that the consultant took control of the consultation and also that the consultant determined the motive or background of the consultation.

The third consultant behavior, consultant works with entire center, was significant only at the second follow-up interview; ideas which were adopted as presented were related to the consultant working with the whole agency. Consultant control as indicated by these three tables was less apparent for re-invented than for adopted ideas. Consultant control thus seems related to some extent to both adopted and re-invented ideas, but less so for re-invented ideas.

A tape recording was made of a group session during each consultation and later analyzed to determine percent of time the consultant and staff spent in specific activities. The data are reported in the following tables, Tables 12, 13, 14, 15, 16, and 17.

Table 12

Relationship of Total Time of Group Session to Re-invention

T_1

	0-99 min.	100+ min.	Total
Re-invention	16 (53.3%)	14 (46.7%)	30 (100%)
Adopted as presented	36 (87.8)	5 (12.2)	41 (100%)
Total	52	19	71

$X^2=8.82$, df=1, sig<.01

T_2

Re-invention	32 (58.2%)	23 (41.8%)	55 (100%)
Adopted as presented	38 (77.6)	11 (22.4)	49 (100%)
Total	70	36	104

$X^2=3.58$, df=1, sig=.05

The total length of the group session was statistically related to re-invention, according to data presented in Table 12. In cases where ideas were adopted as presented, the group sessions were likely to be shorter. The ideas which were re-invented split more evenly between shorter and longer group sessions.

Table 13

Relationship of Consultant Time Spent Soliciting Information and Opinions to Re-invention

T_1

	0-2 min.	3+ min.	Total
Re-invention	19 (63.3%)	11 (36.7%)	30 (100%)
Adopted as presented	30 (73.2)	11 (26.8)	41 (100%)
Total	49	22	71

X^2=.39, df=1, n.s.

T_2

Re-invention	28 (50.9%)	27 (49.1%)	55 (100%)
Adopted as presented	35 (71.4)	14 (28.6)	49 (100%)
Total	63	41	104

X^2=3.75, df=1, sig=.05

Data in Table 13 indicate that by T_2 there was some relationship between the amount of time the consultant spent soliciting staff information and opinions, and implementation. Ideas adopted as presented are more likely to be from sessions in which the consultant spent less time soliciting opinions, while the re-invented ideas come equally from short and long times spent soliciting opinions. In interpreting the general significance of this table, it must be noted that the tape recording was conducted during a group session that was often used for the purposes of feedback. The nature of some sessions may have a direct effect on these data regarding solicitation of staff opinions.

Table 14

Relationship of Consultant Time Spent Formulating Problem to Re-invention

T_1

	0-14 min.	15+ min.	Total
Re-invention	23 (76.7%)	7 (23.3%)	30 (100%)
Adopted as presented	24 (58.5)	17 (41.5)	41 (100%)
Total	47	24	71

X^2=1.80, df=1, n.s.

T_2

Re-invention	45 (81.8%)	10 (18.2%)	55 (100%)
Adopted as presented	36 (73.5)	13 (26.5)	49 (100%)
Total	81	23	104

X^2=.62, df=1, n.s.

As shown in Table 14, there were no statistically significant relationships between the amount of time the consultant spent formulating the problem and implementation.

Table 15

Relationship of Consultant Time Spent Suggesting Ideas to Re-invention

T_1

	0-19 min.	20+ min.	Total
Re-invention	15 (50.0%)	15 (50.0%)	30 (100%)
Adopted as presented	5 (12.2)	36 (87.8)	41 (100%)
Total	20	51	71

X^2=10.44, df=1, sig=.001

T_2

Re-invention	27 (49.1%)	28 (50.9%)	55 (100%)
Adopted as presented	8 (16.3)	41 (83.7)	49 (100%)
Total	35	69	104

X^2=11.03, df=1, sig<.001

Table 15 shows a highly significant relationship between the amount of consultant time spent suggesting ideas and implementation. With re-invention there were no differences in amount of time the consultant spent suggesting ideas; however, ideas adopted as presented were characterized by greater amounts of consultant time devoted to suggesting ideas.

Table 16

Relationship of Consultant Time Spent in "Other" Consultant Comments to Re-invention

T_1

	0-15 min.	16+ min.	Total
Re-invention	6 (20.0%)	24 (80.0%)	30 (100%)
Adopted as presented	24 (58.5)	17 (41.5)	41 (100%)
Total	30	41	71

$X^2=9.02$, df=1, sig<.01

T_2

Re-invention	14 (25.5%)	41 (74.5%)	55 (100%)
Adopted as presented	25 (51.0)	24 (49.0)	49 (100%)
Total	39	65	104

$X^2=6.18$, df=1, sig=.01

Data from the analysis of "other" consultant comments are presented in Table 16. ("Other" consultant comments were defined as comments made by the consultant but not falling into the alternative scoring categories.)

In those consultations in which consultants spent considerable time during the taped meeting making non-topic-related comments, ideas which were used were more likely to be re-invented than adopted. Conversely, where "other" comments were 15 minutes or less, ideas which were used were more likely to be adopted than re-invented.

Table 17

Relationship of Time Spent in Staff Comments to Re-invention

T_1

	0-29 min.	30+ min.	Total
Re-invention	8 (26.7%)	22 (73.3%)	30 (100%)
Adopted as presented	22 (53.7)	19 (46.3)	41 (100%)
Total	30	41	71

$X^2=4.13$, df=1, sig<.05

T_2

Re-invention	13 (23.6%)	42 (76.4%)	55 (100%)
Adopted as presented	24 (49.0)	25 (51.0)	49 (100%)
Total	37	67	104

$X^2=6.20$, df=1, sig=.01

As Table 17 reports, there was a statistically significant relationship between amount of time spent in staff comments and re-invention. One explanation might be that the more initiative the staff takes, the more likely they are to consider re-invention. In any case, re-invention of ideas was characterized by high proportions of staff comments.

Finally, staff at each agency were asked to list the assets and liabilities of the consultant. These data were analyzed by re-invention categories to determine whether specific assets and liabilities were related to type of implementation. Results suggest that systematic differences do exist.

In cases where implementation and re-invention took place, the consultant's assets were the ability to help the agency confront the issue and to stimulate thinking (35 percent), his or her knowledge of resources (31 percent), and the consultant's sincere interest and concern (31 percent). When adoption of ideas as presented occurred, staff rated the consultant high on familiarity with or experience in situation at agency (57 percent), willingness to listen (33 percent), and ability to receive and synthesize information (33 percent). It is noteworthy that two of the three primary consultant assets for adoption involved the consultant receiving information. Perhaps by collecting background data the consultant was able to suggest ideas that closely matched the situation at the agency and needed no re-invention. In some ways, the data on consultant liabilities are more interesting than the assets. Implementation with re-invention was related to the consultant's inability to establish trust (43 percent), lack of information on a particular agency (34 percent), and personality conflicts at the agency (33 percent). Adoption of ideas as presented was characterized by the consultant's inability to draw people out and a failure to elicit staff ideas (57 percent).

The picture that emerges from these data is that when implementation with re-invention occurs, the consultant was active (helping the agency confront the issue, stimulating thinking), and interested (sincere interest and concern), but was not strong in forming good relations with staff (inability to establish trust, personality conflicts). In cases of adoption of ideas as originally presented the consultant received considerable information (willingness to listen, receive information) but was not particularly active (inability to draw people out); the consultation seemed to be more passive and less process-oriented.

VI. CONCLUSIONS AND IMPLICATIONS

The basic issue under consideration in the present study is the process of innovation. In order for either re-invention or full adoption to occur, the idea must be implemented; without implementation, no modification is possible.

The important question, then, is what strategies are most effective in solving problems and meeting needs of the user agency? If what is required to solve a problem is to introduce some kind of change into the system, what kind of change will be most helpful? A program which can be adopted directly as presented, without modification? Or an innovation which will need to be re-invented to fit the local circumstances?

A second question is that addressed by this paper: What are the characteristics of ideas which are re-invented as compared with ideas adopted as presented without modification? Is re-invention related to the characteristics of the idea, characteristics existing in the organization, characteristics and behaviors of a consultant, or some interaction of all of them?

The data from the present study suggest that some degree of re-invention is usually inevitable in the process of planned change. The dynamics between the adopting unit, change agent, and the innovative idea are such that a "pure" form of implementation is often not possible and not appropriate to the situation.

1. Re-invention occurs nearly as often as adoption with no change. Of the ideas implemented (104 out of 280), nearly equal numbers are re-invented as are adopted unchanged (55 vs. 49).

2. Re-invention is more likely to occur in cases where innovations are more complex. Of the innovations implemented, those which were re-invented appear to require greater amounts of time to implement than innovations which were adopted as presented.

- Of the innovations implemented, those which were re-invented required more people to implement them than innovations which were adopted as presented.

As noted above, the number of persons involved in straightforward adoption of an idea was fewer than in cases where re-invention took place. That finding, combined with these data on amount of time required, combine to support a basic communication principle: The greater the number of persons/levels a message goes through, the greater the amount of time it takes for a message (innovative idea) to get effectuated and the greater is the degree of modification (distortion).

3. Re-invention is more likely to occur when innovations are irreversible.

- Of the ideas implemented, those which were re-invented were more likely to be judged not easy to discard than those which were adopted as presented.

Although statistically significant at the .10 level, the data indicate that three-fourths of the ideas which were re-invented were hard to reverse once they were adopted. The motivation for re-invention appears to be much stronger and more legitimate in the cases where it was next to impossible to change the course of action or revert the decision to implement an idea.

4. Re-invention is more likely to occur in situations where a consultant does not take active control or does not play a major role in the consultation.

- Of the ideas implemented, those which were re-invented were likely to involve cases where the consultant did not exercise control and in those where the consultant did not determine the motive for the consultation; those adopted as presented were likely to occur in consultations where the consultant exercised control and in those where the consultant determined the motive for the consultation.

- Of the ideas implemented, those which were re-invented were characterized by consultants providing no influence regarding implementation; those which were adopted as presented were characterized by consultants providing a major influence.

The amount of influence exerted by the consultant was related to the degree of re-invention; the greater the degree of consultant influence in

the group sessions, the lower the degree of re-invention. In cases where consultants were heavily involved and had major influence, very little re-invention took place, and innovations tended to be used in a precisely identical manner as they were presented by the consultants. Of the ideas which were not re-invented (were adapted unchanged), consultants had a major influence in 67 percent of the cases, as compared to 22 percent of the cases where ideas were definitely re-invented. In addition, the rate of adoption of an innovative idea is positively related to the amount of control exercised by a consultant during the consultation. Looking at the other side of the coin we find that the rate of re-invention is inversely related to the amount of control by the change agent.

5. Re-invention is more likely to occur in group sessions which are relatively unstructured.

- Of the ideas implemented, those which were re-invented were more likely to occur in group sessions characterized by high proportions of "other" consultant comments and by high proportions of staff comments.

- Of the ideas implemented, those which were adopted as presented were likely to occur in consultations where the consultant devoted considerable time to suggesting ideas and solutions.

Determination of activities during group sessions was based on tape recordings of all consultations. As discussed earlier, specific consultant activities were identified and then scored. The category, "other" consultant comments, includes general comments not classifiable into the other categories. Although the exact nature of the "other" comments is not known, they did not apply to any of the specific consultant behaviors. (The consultant categories were: a. solicits information and opinions, b. formulates problem, c. suggests ideas and solutions, and d. other comments.) Sessions which did not include high proportions of the more standard consultation activities, but instead included more comments of a general nature were felt to be relatively unstructured, at least in terms of most consultations.

Re-Invention: Some Policy Implications

What are the implications of re-invention for mental health service delivery? How could programs of planned change benefit by encouraging re-invention? What are the relative advantages of re-invention and of adoption without re-invention? What does re-invention mean to policy makers?

Re-invention occurs with considerable frequency in community mental health centers. In fact, re-invention occurs slightly more often than straightforward adoption. This high degree of re-invention most likely occurs in response to the realities of the local situation and local community. Each user agency has its own structure--values, obligations, commitments--as well as its own limitations. The agency must function within this context. To maintain itself it must filter out those ideas, or aspects of an idea, which are not congruent with its overall position--thus, re-invention (or total rejection and failure to implement).

The assumption that adopters are passive is not always accurate, and change models based on that assumption are likely to be ineffective. Equally invalid is the assumption that innovations have a universal and constant applicability. Changes in community concerns, state and local policy, and most dramatically legislation regarding mandated services, have a dramatic effect on the applicability of any innovation.

The danger in adopting an innovation or an idea in the exact same form as it was introduced and/or understood is that the beneficial aspects as well as the misunderstood potentials of the innovation are also inherited without much thought. For example, the California Fair Trade Act of 1931 was adopted by 20 states with minor variations; 10 out of 20 states copied two serious typographical errors in the original California law (Walker, 1969).

Recognition of the possibility of re-invention helps highlight the fact that all innovations are not universally applicable. Social systems vary, as do innovations. Some innovations should <u>not</u> be adopted by some systems, or at best should definitely be adapted.

In terms of mental health service delivery, the dissimilarity between agencies is especially striking. Catchment area characteristics can range from a high density, inner-city location to a rural region with sparse population and few resources. For a center to be responsive to its client population, re-invention is likely to be necessary in a large number of cases. Staff need to be aware of the fact that re-invention is frequent, and should be helped to distinguish those aspects of a program that are difficult to adapt from those where re-invention can most effectively and beneficially occur.

Any program of planned change must take re-invention into account as a primary activity and must provide techniques for facilitating this process. If data from this study indicating that re-invention is more common than adoption are supported by other research, there are major implications for change models. Re-invention cannot be treated as an interesting variation on a basic model, rather it becomes the basic activity. The utility of the model will be dependent on the extent to which it addresses re-invention and provides a theoretical framework for this activity.

Re-invention implies a wide range of specificity and generality of innovation policies. In some cases only the general area needing attention is identified and the innovative program or practice must then be designed to cope with this problem. In other cases, a particular innovative practice to fulfill the needs of all adopting units may be suggested, but with the operational details left largely to be decided by each adopting unit. In yet other cases, the innovation's requirements are detailed and any deviation from the originally prescribed version of the innovation is not accepted.

The policy we suggest is that an innovation be introduced as a general concept and include recommendations to facilitate appropriate re-invention in a local setting so as to help the idea fit local conditions and to make the innovation more acceptable to the users. This position includes the fact that the sponsoring agency may have to actively encourage the process of re-invention.

It is clear that re-invention actually occurs with great frequency; it is less clear whether researchers and policy makers acknowledge this activity. One implication of this study is that policy makers must consciously decide whether to accept a policy of re-invention and thus take steps to encourage it when it

is appropriate, or to support a policy of non-re-invention. It also is apparent that policy makers must be well aware of local conditions and variations in order to decide which innovations to promote, and whether to promote all or select aspects of the idea.

Re-invention has far-reaching implications for change agents--both in terms of selection and of training. The individual who can help the agency identify which components to adopt and which to re-invent, and can offer assistance in the re-invention process is bound to be more effective. Change agents will need to be trained in procedures to facilitate re-invention.

Finally, re-invention must be addressed by researchers and communications theorists. Are there certain core elements of an innovation where no change can be allowed? How can these core elements be identified? How can the merits of an innovation adequately be judged? How can a number of re-invented innovations be compared? To what extent can an innovation be re-invented before it loses its original identity? Hopefully these issues will contribute to the development of the re-invention concept.

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Appendix A

The following chi-square tables present the analyses of ideas which were re-invented, adopted as presented, or not adopted at all. These tables include ideas not adopted at all, whereas the tables in the text of the report are limited to ideas which were adopted with no changes or adopted and re-invented.

Table A-1

Number and Percentage of Suggestions in Categories at First (T_1) and Second (T_2) Follow-Up

		T_1		T_2	
		N	%	N	%
Implemented	Re-invention	30	10	55	20
	Adopted as presented	41	14	49	18
Partial implementation; no data on re-invention		103	36	85	30
Not implemented		112	39	91	32
	Total	286	99%	280	100%

Table A-2

Relationship of Complexity: Number of People Required for Implementation by Re-invention

T_1

	1-2 people	3 or more people	Staff plus board, community	Total
Re-invent	4 (13.3%)	16 (53.3%)	10 (33.3%)	30 (100%)
Adopt	19 (46.3)	11 (26.8)	11 (26.8)	41 (100%)
Not used	46 (41.1)	25 (22.3)	41 (36.6)	112 (100%)
Total	69	52	62	

X^2=14.78, df=4, sig=.00

T_2

Re-invent	11 (20.0%)	25 (45.5)	19 (34.5)	55 (100%)
Adopt	21 (42.9)	16 (32.7)	12 (24.5)	49 (100%)
Not used	40 (44.0)	17 (18.7)	34 (37.4)	91 (100%)
Total	72	58	65	

X^2=16.17, df=4, sig=.00

Table A-3

Relationship of Complexity: Cost to Re-invention

T_1

	No Cost	Cost	Total
Re-invent	19 (63.3%)	11 (36.7%)	30 (100%)
Adopt	36 (87.8)	5 (12.2)	41 (100%)
Not used	86 (76.8)	26 (23.2)	112 (100%)
Total	141	42	

X^2=5.88, df=2, sig=.05

T_2

Re-invent	39 (70.9)	16 (29.1)	55 (100%)
Adopt	42 (85.7)	7 (14.3)	49 (100%)
Not used	68 (75.6)	22 (24.4)	90 (100%)
Total	149	45	

X^2=3.34, df=2, sig=.19

Table A-4

Relationship of Complexity: Amount of Time Required to Re-invention

T_1

	0-8 hours	8-40 hours	40 or more hours	Total
Re-invent	1 (3.3%)	13 (43.3%)	16 (53.3%)	30 (100%)
Adopt	13 (31.7)	16 (39.0)	12 (29.3)	41 (100%)
Not used	31 (27.7)	37 (33.0)	44 (39.3)	112 (100%)
Total	45	66	72	

X^2=10.17, df=4, sig=.04

T_2

Re-invent	8 (14.5)	16 (29.1)	31 (56.4)	55 (100%)
Adopt	14 (28.6)	20 (40.8)	15 (30.6)	49 (100%)
Not used	26 (28.6)	35 (38.5)	30 (33.0)	91 (100%)
Total	48	71	76	

X^2=10.32, df=4, sig=.04

Table A-5

Relationship of Specificity of Idea to Re-invention

T_1

	Specific	Abstract	Total
Re-invent	15 (50.0%)	15 (50.0%)	30 (100%)
Adopt	22 (53.7)	19 (46.3)	41 (100%)
Not used	82 (73.2)	30 (26.8)	112 (100%)
Total	119	64	

X^2=8.61, df=2, sig=.01

T_2

Re-invent	26 (47.3%)	29 (52.7%)	55 (100%)
Adopt	27 (55.1)	22 (44.9)	49 (100%)
Not used	67 (73.6)	24 (26.4)	91 (100%)
Total	120	75	

X^2=11.20, df=2, sig=.00

Table A-6

Relationship of Subject of Innovative Idea to Re-invention

T_1

	Information gathering	Program develop.	Relations w/other agencies	Community relations	Board relations	Staff time	Admin.	Total
Re-invent	1 (3.3%)	6 (20.0%)	4 (13.3%)	4 (13.3%)	2 (6.7%)	3 (10.0%)	10 (33.3%)	30 (100%)
Adopt	8 (19.5)	5 (12.2)	7 (17.1)	2 (4.9)	5 (12.2)	2 (4.9)	12 (29.3)	41 (100%)
Not used	30 (26.8)	17 (15.2)	16 (14.3)	17 (15.2)	5 (4.5)	13 (11.6)	14 (12.5)	112 (100%)
Total	39	28	27	23	12	18	36	

X^2=21.45, df=12, sig=.04

T_2

Re-invent	6 (10.9)	14 (25.5)	9 (16.4)	5 (9.1)	2 (3.6)	8 (14.5)	11 (20.0)	55 (100%)
Adopt	10 (20.4)	7 (14.3)	7 (14.3)	4 (8.2)	4 (8.2)	3 (6.1)	14 (28.6)	49 (100%)
Not used	21 (23.1)	13 (14.3)	11 (12.1)	19 (20.9)	5 (5.5)	9 (9.9)	13 (14.3)	91 (100%)
Total	37	34	27	28	11	20	38	

X^2=17.21, df=12, sig=.14

Table A-7

Relationship of Flexibility to Re-invention

T_1

	Easy to try and discard	Not easy to discard	Total
Re-invent	7 (23.3%)	23 (76.7%)	30 (100%)
Adopt	19 (46.3)	22 (53.7)	41 (100%)
Not used	47 (42.0)	65 (58.0)	112 (100%)
Total	73	110	

X^2=4.34, df=2, sig=.11

T_2

Re-invent	15 (27.3)	40 (72.7)	55 (100%)
Adopt	23 (46.9)	26 (53.1)	49 (100%)
Not used	35 (38.5)	56 (61.5)	91 (100%)
Total	73	122	

X^2=4.35, df=2, sig=.11

Table A-8

Relationship of Consultant Influence to Re-invention

T_1

	No influence	Minor influence	Major influence	Total
Re-invent	9 (31.0%)	13 (44.8%)	7 (24.1%)	29 (100%)
Adopt	7 (17.1)	8 (19.5)	26 (63.4)	41 (100%)
Not used	27 (49.1)	12 (21.8)	16 (29.1)	55 (100%)
Total	43	33	49	

X^2=21.27, df=4, sig=.00

T_2

Re-invent	21 (38.2%)	22 (40.0%)	12 (21.8%)	55 (100%)
Adopt	9 (18.4)	7 (14.3)	33 (67.3)	49 (100%)
Not used	11 (36.7)	8 (26.7)	11 (36.7)	30 (100%)
Total	41	37	56	

X^2=23.10, df=4, sig=.00

Table A-9

Relationship of Consultant's Control of Consultation to Re-invention

T_1

	Consultant exercised control	Consultant did not exercise control	Total
Re-invent	14 (46.7%)	16 (53.3%)	30 (100%)
Adopt	34 (82.9%)	7 (17.1)	41 (100%)
Not used	48 (42.9%)	64 (57.1)	112 (100%)
Total	96	87	

X^2=19.80, df=2, sig=.00

T_2

Re-invent	22 (40.0%)	33 (60.0%)	55 (100%)
Adopt	39 (79.6)	10 (20.4)	49 (100%)
Not used	41 (45.1)	50 (54.9)	91 (100%)
Total	102	93	

X^2=19.88, df=2, sig=.00

Table A-10

Relationship of Consultant's Determining Motive for Consultation to Re-invention

T_1

	Consultant determined agency's motive for consultation	Consultant did not determine agency's motive for consultation	Total
Re-invent	19 (63.3%)	11 (36.7%)	30 (100%)
Adopt	34 (82.9)	7 (17.1)	41 (100%)
Not used	69 (61.6)	43 (38.4)	112 (100%)
Total	122	61	

X^2=6.31, df=2, sig=.04

T_2

Re-invent	30 (54.5%)	25 (45.5%)	55 (100%)
Adopt	41 (83.7)	8 (16.3)	49 (100%)
Not used	58 (63.7)	33 (36.3)	91 (100%)
Total	129	66	

X^2=10.26, df=2, sig=.01

Table A-11

Relationship of Consultant Working With Whole Agency to Re-invention

T_1

	Consultant worked with whole agency	Consultant did not work with whole agency	Total
Re-invent	23 (76.7%)	7 (23.3%)	30 (100%)
Adopt	36 (87.8)	5 (12.2)	41 (100%)
Not used	81 (72.3)	31 (27.7)	112 (100%)
Total	140	43	

X^2=4.00, df=2, sig=.14

T_2

Re-invent	38 (69.1%)	17 (30.9%)	55 (100%)
Adopt	43 (87.8)	6 (12.2)	49 (100%)
Not used	60 (65.9)	31 (34.1)	91 (100%)
Total	141	54	

X^2=7.97, df=2, sig=.02

Table A-12

Relationship of Total Time of Group Session to Re-invention

T_1

	0-39 min.	40-69 min.	70-99 min.	100-129 min.	130 min.	Total
Re-invent	7 (23.3%)	6 (20.0%)	3 (10.0%)	6 (20.0%)	8 (26.7%)	30 (100%)
Adopt	7 (17.1)	10 (24.4)	19 (46.3)	1 (2.4)	4 (9.8)	41 (100%)
Not used	20 (17.9)	27 (24.1)	22 (19.6)	18 (16.1)	25 (22.3)	112 (100%)
Total	34	43	44	25	37	

X^2=20.70, df=8, sig=.01

T_2

Re-invent	11 (20.0%)	14 (25.5%)	7 (12.7%)	10 (18.2%)	13 (23.6%)	55 (100%)
Adopt	6 (12.2)	17 (34.7)	15 (30.6)	3 (6.1)	8 (16.3)	49 (100%)
Not used	15 (16.5)	24 (26.4)	27 (29.7)	11 (12.1)	14 (15.4)	91 (100%)
Total	32	55	49	24	35	

X^2=11.10, df=8, sig=.20

Table A-13

Relationship of Consultant Time Spent Soliciting Information and Opinions to Re-invention

T_1

	0 min.	1 min.	2 min.	3 min.	4 min.	5-9 min.	10 min.	Total
Re-invent	4 (13.3%)	9 (30.0%)	6 (20.0%)	2 (6.7%)	6 (20.0%)	2 (6.7%)	1 (3.3%)	30 (100%)
Adopt	5 (12.2)	19 (46.3)	6 (14.6)	2 (4.9)	3 (7.3)	2 (4.9)	4 (9.8)	41 (100%)
Not used	24 (21.4)	24 (21.4)	14 (12.5)	16 (14.3)	21 (18.8)	13 (11.6)	0 (0.0)	112 (100%)
Total	33	52	26	20	30	17	5	

X^2=27.33, df=12, sig=.01

T_2

Re-invent	6 (10.9)	16 (29.1)	6 (10.9)	9 (16.4)	13 (23.6)	3 (5.5)	2 (3.6)	55 (100%)
Adopt	7 (14.3)	17 (34.7)	11 (22.4)	4 (8.2)	5 (10.2)	1 (2.0)	4 (8.2)	49 (100%)
Not used	23 (25.3)	23 (25.3)	7 (7.7)	14 (15.4)	13 (14.3)	11 (12.1)	0 (0.0)	91 (100%)
Total	36	56	24	27	31	15	6	

X^2=27.62, df=12, sig=.01

Table A-14

Relationship of Consultant Time Spent Formulating Problem to Re-invention

T_1

	0-4 min.	5-9 min.	10-14 min.	15-19 min.	20+ min.	Total
Re-invent	10(33.3%)	7(23.3%)	6(20.0%)	3(10.0%)	4(13.3%)	30(100%)
Adopt	6(14.6)	9(22.0)	9(22.0)	16(39.0)	1(2.4)	41(100%)
Not used	42(37.5)	27(24.1)	15(13.4)	19(17.0)	9(8.0)	112(100%)
Total	58	43	30	38	14	

$X^2 = 18.45$, df = 8, sig = .02

T_2

Re-invent	20(36.4)	19(34.5)	6(10.9)	6(10.9)	4(7.3)	55(100%)
Adopt	9(18.4)	13(26.5)	14(28.6)	12(24.5)	1(2.0)	49(100%)
Not Used	28(30.8)	25(27.5)	9(9.9)	20(22.0)	9(9.9)	91(100%)
Total	57	57	29	38	14	

$X^2 = 17.77$, df = 8, sig = .02

Table A-15

Relationship of Consultant Time Spent Suggesting Ideas to Re-invention

T_1

	0-9 min.	10-19 min.	20-29 min.	30-39 min.	40-49 min.	50+ min.	Total
Re-invent	0(0.0%)	15(50.0%)	7(23.3%)	4(13.3%)	1(3.3%)	3(10.0%)	30(100%)
Adopt	0(0.0)	5(12.2)	12(29.3)	6(14.6)	11(26.8)	7(17.1)	41(100%)
Not used	15(13.4)	43(38.4)	27(24.1)	17(15.2)	2(1.8)	8(7.1)	112(100%)
Total	15	63	46	27	14	18	

$X^2 = 46.93$, df = 10, sig = .00

59

T_2

Re-invent	2(3.6%)	25(45.5)	7(12.7)	11(20.0)	4(7.3)	6(10.9)	55(100%)
Adopt	3(6.1)	5(10.2)	13(26.5)	8(16.3)	9(18.4)	11(22.4)	49(100%)
Not used	12(13.2)	33(36.3)	23(25.3)	12(13.2)	1(1.1)	10(11.0)	91(100%)
Total	17	63	43	31	14	27	

$X^2 = 35.67$, df = 10, sig = .00

Table A-16

Relationship of Consultant Time Spent in "Other"

Consultant Comments to Re-invention

T_1

	0-5 min.	6-10 min.	11-15 min.	16-20 min.	21-25 min.	26-30 min.	31+ min.	Total
Re-invent	1(3.3%)	2(6.7%)	3(10.0%)	8(26.7%)	1(3.3%)	6(20.0%)	9(30.0%)	30(100%)
Adopt	8(19.5)	2(4.9)	14(34.1)	4(9.8)	4(9.8)	6(14.6)	3(7.3)	41(100%)
Not used	12(10.7)	13(11.6)	10(8.9)	21(18.8)	0(0.0)	29(25.9)	27(24.1)	112(100%)
Total	21	17	27	33	5	41	39	

X^2 = 30.68, df = 12, sig = .00

T_2

Re-invent	3(5.5)	3(5.5)	8(14.5)	14(25.5)	2(3.6)	6(10.9)	19(34.5)	55(100%)
Adopt	8(16.3)	1(2.0)	16(32.7)	6(12.2)	4(8.2)	9(18.4)	5(10.2)	49(100%)
Not used	9(9.9)	11(12.1)	11(12.1)	15(16.5)	0(0.0)	25(27.5)	20(22.0)	91(100%)
Total	20	15	35	35	6	40	44	

X^2 = 36.95, df = 12, sig = .00

Table A-17

Relationship of Time Spent in Staff Comments to Re-invention

T_1

	0-9 min.	10-19 min.	20-29 min.	30-39 min.	40-49 min.	50+ min.	Total
Re-invent	4(13.3%)	1(3.3%)	3(10.0%)	9(30.0%)	11(36.7%)	2(6.7%)	30(100%)
Adopt	5(12.2)	4(9.8)	13(31.7)	3(7.3)	14(34.1)	2(4.9)	41(100%)
Not used	3(2.7)	0(0.0)	15(13.4)	34(30.4)	37(33.0)	23(20.5)	112(100%)
Total	12	5	31	46	62	27	

$X^2 = 37.47$, df = 10, sig = .00

T_2

Re-invent	3(5.5)	2(3.6)	8(14.5)	11(20.0)	27(49.1)	4(7.3)	55(100%)
Adopt	7(14.3)	4(8.2)	13(26.5)	6(12.2)	16(32.7)	3(6.1)	49(100%)
Not used	2(2.2)	0(0.0)	15(16.5)	30(33.0)	26(28.6)	18(19.8)	91(100%)
Total	12	6	36	47	69	25	

$X^2 = 33.88$, df = 10, sig = .00